

National Commission on Forensic Science Update

John M. Butler, Ph.D.

National Institute of Standards and Technology

NIST Fellow & Special Assistant to the Director for Forensic Science

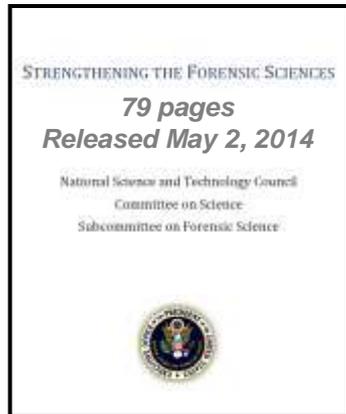
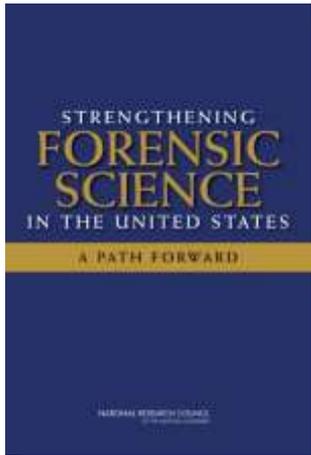
Vice-Chair, National Commission on Forensic Science



SWGAM Meeting
Fredericksburg, VA
January 15, 2015



NCFS and OSAC: U.S. Efforts to Strengthen Forensic Science



http://www.whitehouse.gov/sites/default/files/microsites/ostp/NSTC/strengthening_the_forensic_sciences_may_-_2014.pdf

- National Academy of Sciences (**NAS**) **report** issued in Feb 2009
- White House **Subcommittee on Forensic Science** (SoFS) operated from July 2009 to Dec 2012

DOJ/NIST Partnership (announced Feb 2013)

1. **NCFS** (National Commission on Forensic Science)
 - First meeting held February 3-4, 2014 in Washington DC
2. **OSAC** (Organization of Scientific Area Committees)
 - **Membership named**; first public meetings to be held Feb 2015

Recent Roles of NIST in Federal Government Forensic Science Efforts

Conducted under Memorandum of Understanding (MOU) with DOJ

1. Co-lead the National Commission on Forensic Science

- Federal Advisory Committee to the Department of Justice (DOJ): NIST co-chair (Willie May) and NIST vice-chair (**John Butler**)
- **Focused on policy issues to improve forensic science**
- 31 Commissioners and 8 *ex-officio* members; four meetings held in 2014

2. Organization of Scientific Area Committees

- NIST-led community-based effort: **Mark Stolorow** and **John Paul Jones**
- **Focused on development of discipline-specific standards of practice**
- >500 subject matter experts selected to contribute to development of standards

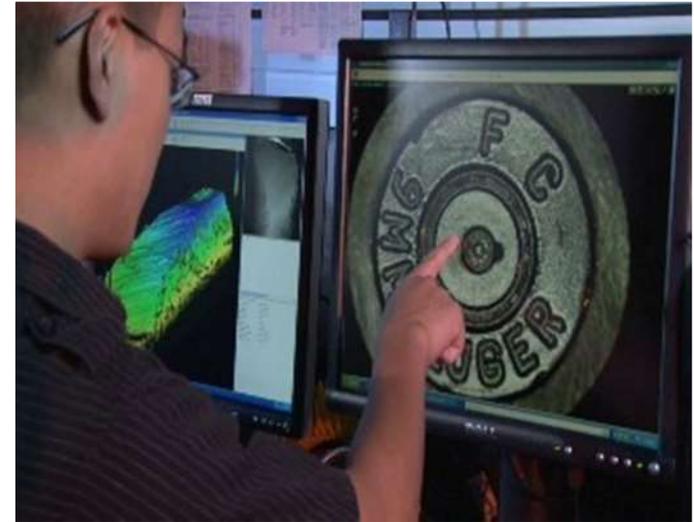
3. Continuing forensic science research efforts at NIST

- **Previous support from the National Institute of Justice (NIJ) has now transitioned to direct Congressional funding to NIST**
- **Susan Ballou** is NIST program director for forensic science research
- NIST Forensic Science Center of Excellence (\$20M over 5 years) proposals being accepted through December 11, 2014

Forensic Science Center of Excellence Competition

NIST will establish a new Forensic Science Center of Excellence

- Center will focus on **developing probabilistic methods** to support the forensic science disciplines, focusing Pattern Evidence and Digital Evidence
- Center will also focus on **developing training tools for practitioners and non-practitioners**
- Requests for proposals closed December 11, 2014
- **Award announcement → March 2015**
- <http://www.nist.gov/coe/forensics/> for more information



Credit: NIST



Credit: FBI

Current NIST Program Areas in Forensic Science Research

NIST ITL

1. Digital (Computer) Forensics

DNA talks at Dec 2014 mtg

Jennifer G. Breaux

Pete Vallone

Becky (Hill) Steffen

Mike Coble

Margaret Kline

Erica Butts

Kevin Kiesler

Katherine Gettings

NIST MML

2. DNA

**Applied Genetics Group
research efforts led (since
Apr 2013) by Pete Vallone**

NIST PML

3. Ballistics/Toolmarks

NIST ITL

4. Statistical Measurements

See presentations from *Forensics @NIST 2014 meeting*

<http://www.nist.gov/forensics/forensics-at-nist-2014-webcast.cfm>



National Commission on Forensic Science

SWGDAM was the first group to learn about the Commission design (January 9, 2014) – official announcement came via press release January 10, 2014



<http://www.justice.gov/ncfs>

Timeline for Commission Activities

SWGDM talk (January 9, 2014)

- Commission membership named (January 10, 2014)
- *First* Commission meeting (February 3-4, 2014)
- *Second* Commission meeting (May 12-13, 2014)

SWGDM talk (July 17, 2014)

- *Third* Commission meeting (August 26-27, 2014)
- ISHI meeting presentation (October 1, 2014)
- World Forensics Festival talk (October 14, 2014)
- *Fourth* Commission meeting (October 28-29, 2014)

SWGDM talk (January 15, 2015)

- *Fifth* Commission meeting (January 29-30, 2015)

Article Describing the Commission and OSAC

The National Commission on Forensic Science and the Organization of Scientific Area Committees

John M. Butler

National Institute of Standards and Technology
Gaithersburg, Maryland, USA

Abstract

18 pages of information

In early 2014, the U.S. Department of Justice (DOJ) and the National Institute of Standards and Technology (NIST) launched the National Commission on Forensic Science (NCFS) and the Organization of Scientific Area Committees (OSAC) to aid efforts in strengthening forensic science in the United States. NCFS is a two-year renewable federal advisory committee to DOJ with a diverse set of stakeholder perspectives that provide views and policy recommendations to the Attorney General. The NIST-led OSAC effort is being established to provide leadership in developing discipline-specific standards of practice. Ultimately standards and guidelines that populate an OSAC registry will enable accreditation bodies to audit forensic science service providers to these discipline-specific forensic science standards of practice.

This article describes objectives and duties, membership, and first-year activities of the NCFS and the OSAC efforts. Slides presented on this topic October 1, 2014 at the 25th International Symposium on Human Identification (ISHI) are available at

<http://www.nist.gov/forensics/upload/JB-NCFS-and-OSAC-ISHI2014.pdf>.

<http://www.nist.gov/forensics/upload/Butler-ISHI-Proceedings2014.pdf>

National Commission on Forensic Science (NCFS)

A Federal Advisory Committee for the U.S. Department of Justice

www.justice.gov/ncfs

NCFS Leadership



James M. Cole
Deputy Attorney General
DOJ Co-Chair



Willie E. May
Acting Director of NIST
NIST Co-Chair



Nelson A. Santos
Vice-Chair (DOJ)



John M. Butler
Vice-Chair (NIST)

**31 voting members
and 8 ex-officio
members**

Next meeting (5th): January 29-30, 2015

Changing of DOJ Leadership



DAG **James Cole** retired January 8, 2015



Sally Yates named
Acting DAG January 10, 2015

Current NCFS Subcommittees

where much of the Commission work will occur...

1. Accreditation and Proficiency Testing
2. Interim Solutions
3. Medico-legal Death Investigation
4. Reporting and Testimony
- 5. Scientific Inquiry and Research**
6. Training on Science and Law
7. Human Factors and Cognitive Bias

**Each NCFS
subcommittee
includes individuals
beyond the
Commissioners**

Issues being examined:
(a) Foundational literature
(b) Educational programs
(c) Transition of research
(d) Measuring impact

Subcommittee products will be discussed and voted on by the full Commission prior to be recommended to the Attorney General

NCFS Meeting Materials Available

<http://www.justice.gov/ncfs/meeting-materials.html>

Meeting Summary

23 page pdf document

National Commission on
Forensic Science

Meeting Summary

May 12-13, 2014

Office of Justice Programs
810 7th Street NW, Washington, DC

Speaker Slides (pdf files)

2nd National Commission on Forensic Science Webcast

National Commission on Forensic Science Meeting...



Webcast
(>9 hours of
archived video)

MEETING TWO

References

Listing of 22 references provided to Commissioners

Human Factors and Cognitive Bias in Forensic Science

Deborah Boehm-Davis, Dean, College of Humanities and Social Sciences and University Professor, Department of Psychology, George Mason University

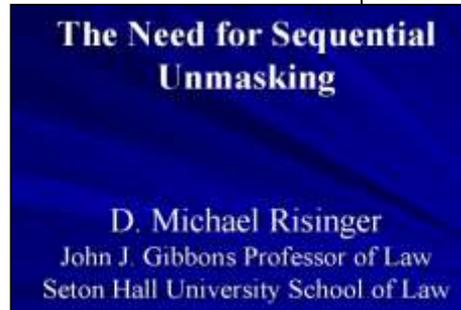
John Collins, President, Forensic Foundations Group

The Need for Sequential Unmasking

Michael Risinger, John J. Gibbons Professor of Law, Seton Hall University School of Law

David H. Kaye

Distinguished Professor of Law and Weiss Family Faculty Scholar, Penn State University, Dickinson School of Law



Commission Work Products

- The Commission is a Department of Justice Federal Advisory Committee and therefore **only has direct authority to make recommendations to the Attorney General** (who can direct efforts in three DOJ laboratories: FBI, DEA, and ATF)
- Work Product Types: (1) Views, (2) Directives, or (3) Policies

Voting is conducted electronically with a **two-thirds majority required to pass**



NCFS Meeting 3 Topics

August 26-27, 2014

- Amended Bylaws Reviewed
 - **Vote passed on a directive to survey police forensic units**
- **Panel on Cognitive Bias and Human Factors**
 - Speakers: Itiel Dror, Bill Thompson
 - **New subcommittee on Human Factors was formed**
- **Panel on Latent Print Automated Fingerprint Identification System (AFIS) Interoperability**
 - Speakers: Melissa Gische, Austin Hicklin, Lauren Reed, David Russell
- **UK Regulator Andrew Rennison** to share lessons learned from the United Kingdom
- **Panel on Role of Accreditation in Forensic Science**
 - Speakers: Beth Mishalanie, Ross Randlett, Roger Klein
- **Subcommittee Reports**

NCFS Meeting 4 Topics

October 28-29, 2014

- **Subcommittee Reports & Work Product Discussion**
 - **Six work products** (see next slide)
- OSAC and NIST Center of Excellence update
 - Speaker: Mark Stolorow
- Bureau of Justice Statistics Law Enforcement Agency Forensic Unit Survey Proposal (follow-up to previous meeting's directive)
 - Speakers: Erica Smith, Matthew DuRose
- Reviews of recently released reports
 - **Achieving Interoperability for Latent Fingerprint Identification in the United States (OSTP)**
 - Speakers: Tania Simoncelli, Laura Gerhardt
 - **Identifying the Culprit: Assessing Eyewitness Identification (NRC)**
 - Speakers: Thomas Albright, Judge Jed Rakoff

Commission Draft Work Products at Meeting 4

<http://www.justice.gov/ncfs/work-products>

1. Universal Accreditation (policy)
2. Scientific Literature (views)
3. Pretrial Discovery (policies & directives)
4. Expert Testimony (policies & directives)
5. MDI accreditation & certification (policy)
6. Terminology (views)

Public comments are reviewed and input from Commissioners sought during NCFS meeting deliberations

Comments Received on Initial NCFS Subcommittee Work Products

Posted October 14, 2014 and closed October 27, 2014 11:59PM

Subcommittees decided on format, length, etc.

Document	Length	# Comments Received
Universal Accreditation (policy)	4 pages	21
Scientific Literature (views)	4 pages	9
Pretrial Discovery (policies & directives)	28 pages	37
Expert Testimony (policies & directives)	27 pages	40
MDI accreditation & certification (policy)	7 pages	16
Terminology (views)	2 pages	15
		138 comments

41 additional comments received (Nov 12 to 21)

Public comments provided to www.Regulations.gov (docket # DOJ-LA-2014-0006)

Website Postings of Draft Work Products

- A NCFS work products page was created before the 4th meeting: <http://www.justice.gov/ncfs/work-products>
- Individuals wishing to submit written public comment regarding draft work products should do so by going to www.regulations.gov and entering Docket No. DOJ-LA-2014-0006.
- As discussed in the revised bylaws reviewed during the last meeting, subcommittee work products are made available to Commissioners and to the general public at least 15 days before the next meeting – **additional public comments can be provided 15 days after a meeting**
- A GovDelivery system enables those registered to receive email notification when new work products are added (forensic associations have also emailed their memberships)

Final Documents Up for Potential Vote at Meeting 5 (January 29-30, 2015)

Through 30 day public review (and revisions made):

1. **Universal Accreditation** (policy)
2. Accreditation of Medical Examiner and Coroner Offices (policy)
3. Certification of Medicolegal Death Investigators (directive)
4. Scientific Literature in Support of Forensic Science and Practice (views)

New Documents Up for Review at Meeting 5 (January 29-30, 2015)

- **Inconsistent Terminology** (views document)
 - From Reporting & Testimony Subcommittee
- “It is the view of the NCFS that the forensic science community should endeavor to make terminology more consistent within a particular discipline and across disciplines... This document summarizes problems that result from the inconsistent use of terminology...”
 - The term “reasonable degree of scientific certainty” is in the cross-hairs of this subcommittee

Standards Discussion Planned

- At the next Commission meeting (**January 29, 3:30-5:30pm Eastern**), the Commission will learning about and discussing standards developing organizations (SDOs), accreditation to ISO/IEC 17025, and planned OSAC standards process
- Invitation to tune in (or watch later on webcast) and learn about standards and accreditation

Overview of Standards involved in the Forensic Science Enterprise

ILAC-G19:08/2014

Modules in a Forensic Science Process

ISO/IEC 17024

Certification
Provider

ISO/IEC 17043

Proficiency Test
Provider

ISO/IEC 17011

Accrediting Body

Forensic Testing Laboratory

Technical
standard

ISO/IEC 17025

Supplemental
material

DNA

Latents

Firearms

...

QAS

Police Agency

ISO/IEC 17020

Crime scene unit

M.E./Coroner

ISO/IEC 15189

Autopsy

Virtopsy

OSAC work will help provide supplemental materials and new technical standards

Accreditation to appropriate quality standards should provide confidence for all stakeholders in what is being done



ANSI Essential Requirements

See <http://www.ansi.org/essentialrequirements>

Essential Requirements for Due Process:

1. Openness
2. Lack of dominance
3. Balance of interests
4. Coordination and harmonization
5. Notification of standards development
6. Consideration of views and objections
7. Consensus vote
8. Appeals
9. Written procedures
10. Compliance with normative American National Standards policies and administrative procedures

Future NCFS Meeting Dates

<http://www.justice.gov/ncfs>

Meeting 5: January 29-30, 2015
Meeting 6: April 30-May 1, 2015

Additional meeting dates will be set soon

Federal Advisory Committees exist on a 2-year renewal cycle

The existing Commission ***charter expires April 23, 2015***
DOJ plans to renew charter (and include digital evidence)

Upcoming NIST Meetings

- **Improving Biometric and Forensic Technology: The Future of Research Datasets** (Gaithersburg, MD): **January 26-27, 2015**
- **International Symposium on Forensic Measurement Issues and Error** (Washington, DC): **July 20-24, 2015**

**FORENSIC SCIENCE
ERROR MANAGEMENT**

**INTERNATIONAL
FORENSICS SYMPOSIUM**

JULY 20-24, 2015 • WASHINGTON, DC

Recent and Upcoming DNA Articles

Electrophoresis (Nov 2014)

Special Issue: Forensic Analysis

Organized by Bruce McCord

31 articles published

- Bille et al. – probabilistic genotyping approaches
- Butts & Vallone – rapid DNA protocols explored with 6 cyclers
- Phillips et al. – new STR loci
- Bright et al. – stutter modeling
- Carboni et al. – kinship improvements with more STRs
- ...

FSI Genetics (July 2015)

Special Issue with ***invited reviews***
Future Trends in Forensic Genetics

Organized by John Butler

13-14 articles planned

- Tissue identification
- DNA phenotyping
- DNA ancestry
- Non-human DNA
- NGS
- Rapid DNA
- STR allele characterization
- ...

TWGDAM/SWGDAM over the years (1)

FBI (grad student)

NIST

NIST (invited guest)

- **July 1993:** (my first TWGDAM meeting) while I was working at Quantico FSRTC on CE methods; met Eric Buel, George Herrin, ...
- **Jan 1994 to July 1995:** my **CE-STR** and mtDNA updates provided by Bruce McCord & Mark Wilson; I met Dennis Reeder & Dave Duewer, who invited me to NIST as a postdoc
- **July 1995:** Sean Walsh → ABI 310 Genetic Analyzer
- **Jan 1997:** my first talk before TWGDAM on **STRBase** design was unveiled with literature review & STR Fact Sheets
- **Jan 2000:** (my first SWGDAM meeting) after returning to NIST; **Training** (Lucy Davis), STR Interpretation (Renee Romero) → **Validation** → YSTR → Mixture → Autosomal STR Interpretation
- **Oct 2000:** launched NIST MSS3 **mixture interlab study**, solving ABI primer sequences discussed
- **Jan 2001:** my first edition book shown to Gary Sims
- **Oct 2001:** shared MSS3 interlab results

TWGDAM/SWGDAM over the years (2)

- **Jan 2002:** miniSTR work shown during WTC discussion; need for new autosomal STRs discussed (led to D10, D22, D2S441...)
- **July 2002:** Y-STR committee started
- **Jan 2003:** Y-STR and Y-SNP data discussion; selection of SWGDAM Y loci
- **June 2005:** held at same time as NIJ Conference; Margaret came as NIST representative
- **Jan 2007:** MIX05 results shown; formation of Mixture Committee
- **Jan 2009:** finishing chapter of *Fundamentals* book during meeting
- **Jan 2012:** Y-STR discussion & future possibilities where I discussed surname lineage searches
- **Jan 2013:** input on design of MIX13 study
- **Jan 2014:** SWGDAM first to learn about National Commission on Forensic Science (NCFS); I wrote memo to FBI Laboratory management for why SWGDAM should continue in parallel with OSAC
- **Jan 2015:** four NIST speakers: Pete, Mike, Katherine, and John

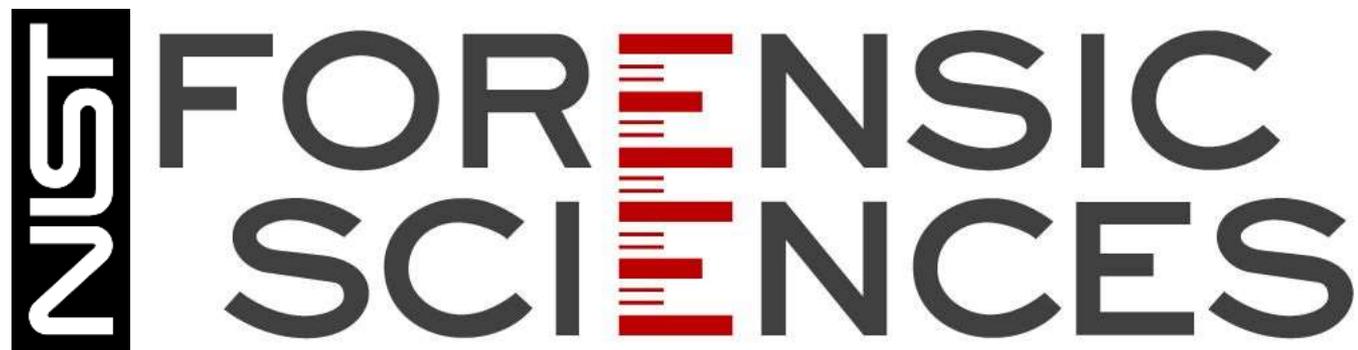
TWGDAM/SWGDAM over the years (3)

NIST (invited guest)

I look forward to continued collaboration with the FBI and SWGDAM and will do my best to aid interactions between OSAC and SWGDAM

National Commission on Forensic Science (NCFS):
www.justice.gov/ncfs

Organization of Scientific Area Committees (OSAC):
www.nist.gov/forensics/osac/index.cfm



www.nist.gov/forensics



301-975-4049

john.butler@nist.gov